

ANACARDIACEAE SUMAC FAMILY

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Shrubs, small trees, or vines, with resinous or milky sap, sometimes poisonous. LEAVES alternate, simple, trifoliolate or pinnately compound, estipulate. INFLORESCENCES terminal and/or axillary, bracteate, spikes, racemes, panicles, or thyrses. FLOWERS actinomorphic, small, perfect or unisexual, with a ring-shaped nectary disc; sepals five, connate below; petals five, distinct; stamens as many as or twice as many as the petals; ovary hypogynous, unilocular, solitary; styles one to three. FRUIT a drupe—Ca. 77 genera, 600 spp., mainly tropical and subtropical, with some temperate, such as ours. The Anacardiaceae contains members that are important sources of tannins and lacquers, have edible fruits (e.g., mango - *Mangifera*, cashews - *Anacardium*, and pistachio - *Pistacia*), or are used as ornamentals (e.g., sumacs - *Rhus* and smoke tree - *Cotinus*).

- 1. Fruit reddish or orange, glandular pubescent (tan and resinous in *Rhus lancea*); inflorescences erect in fruit; plants not poisonous; leaflets to 10 cm long ***Rhus***
- 1' Fruit cream or white, striate, glabrous; inflorescences pendant in fruit; plants poisonous; leaflets to 13 cm long ***Toxicodendron***

Rhus L. Sumac

Shrubs or small trees, to 5 m tall, polygamous (bearing unisexual and bisexual flowers on one plant) or dioecious; bark gray, lenticular. LEAVES simple, trifoliolate or pinnately compound, evergreen or deciduous, coriaceous or thin, entire, lobed or toothed. INFLORESCENCES terminal and/or axillary, bracteate, dense to open spikes, racemes, panicles, or thyrses. FLOWERS sessile, regular; sepals glabrous or pubescent, green or pink; petals cream or yellow, glabrous or pubescent; style three-lobed. FRUITS lenticular-orbicular, reddish to orange, glandular pubescent. —150 spp.; worldwide, subtropical and temperate. (Ancient Greek name for sumac). Barkley F. A. 1937. *Ann. Mo. Bot. Garden* 24: 265-498.

- 1. Leaves simple
 - 2. Blades broadly elliptic, olive-green, flat with glandular hairs beneath; petioles to 1 cm long ***R. kearneyi***
 - 2' Blades ovate (sometimes broadly so), bright green, often conduplicate, glabrous; petioles more than 1 cm long ***R. ovata***
- 1' Leaves compound
 - 3. Rachis winged; leaflets hirsute, 6-9 mm long; branches stiff and spinescent ***R. microphylla***
 - 3' Rachis not winged; leaflets glabrous to puberulent, 15-80 mm long; branches flexible and not spinescent 4

- 4. Leaves pinnately compound
 - 5. Leaves 5-9 foliolate *R. virens*
 - 5' Leaves 13-19 foliolate *R. glabra*
- 4' Leaves usually trifoliolate
 - 6. Leaflets ovate to rhombic, crenate to deeply lobed *R. aromatica*
 - 6' Leaflets narrowly lanceolate, entire to slightly serrate *R. lancea*

Rhus aromatica Aiton (aromatic, referring to the leaves). Skunkbush, Three-leaf Sumac, Lemonade Sumac. —Shrubs with spreading branches, sometimes forming thickets, to 3 m tall; bark gray, lenticular; twigs brown, puberulent to glabrate. LEAVES trifoliolate or palmately lobed to simple and unlobed; petioles 8-15 mm long; leaflets sessile, ovate to rhombic, crenate to deeply lobed, glabrous to puberulent; bases cuneate, sometimes narrowly so; terminal leaflet 15-35 mm long, 7-25 mm wide; foliage thin, deciduous and dark red in the fall. INFLORESCENCES a short dense panicle of compound spikes, arising from lateral branches, and appearing early before the leaves in the spring, 10-15 mm long; bracts triangular, reddish, pubescent. FLOWERS to 3 mm long; sepals ovate, pinkish, glabrate; petals obovate, pale yellow, glabrous. FRUIT lenticular-orbicular, 6-8 mm in diameter, dull orange to dark reddish, villous and/or short glandular pubescent, viscid. [*Rhus trilobata* Nutt.]. —Throughout the U.S., except the northern Great Lakes and Pacific Northwest, also s Canada and n Mex.

Var. **trilobata** (Nutt.) A. Gray (three lobes, referring to the leaves). —Plants ill-scented. FRUITS sparsely pubescent. [*Rhus trilobata* Nutt.]. —Wide-ranging both ecologically and geographically from rim rock, rocky ledges and slopes to canyon bottoms in the deserts, grasslands, chaparral, Madrean woodlands, pinyon-juniper woodlands, ponderosa pine forests, and riparian zones: all AZ cos.; 500-2275 m (1500-7500 ft); Mar-May; w U.S. Material from the w U.S. including AZ has been recognized as *Rhus aromatica* Aiton var. *trilobata* (Nutt.) A. Gray, differing in its sparsely pubescent fruits from typical *R. aromatica* of the e U.S. with villous fruits (Fernald 1941); also, *R. aromatica* var. *trilobata* is ill-scented whereas *R. aromatica* of the e U.S. has a pleasant citrus scent (David Hammond pers. comm.). Several other varieties of *Rhus aromatica* have been named (based on characters such as leaf size, lobing, and pubescence, and time of flowering) that would occur in AZ (Barkley 1937). Since there are no consistent geographic patterns to the variation in these characters, *Rhus aromatica* are best treated as a polymorphic species consisting of only the two varieties (e U.S. and w U.S.).

Rhus glabra L. (smooth, referring to the leaves). Smooth Sumac, Scarlet Sumac. —Thicket-forming shrubs or small trees, to 3 m tall; bark dark gray; twigs glaucous, lenticular, pinkish-gray. LEAVES odd-pinnately compound, 13-19 foliolate; leaflets sessile, narrowly lanceolate to oblong, 20-80 mm long, 10-25 mm wide, subentire to serrate, glabrous, dark green above, paler beneath, deciduous and bright red in the fall; apex acuminate; base rounded. INFLORESCENCES dense thyrses, 16-24 cm long, 8-24 cm wide, puberulent; bracts narrowly lanceolate, caducous. FLOWERS to 3 mm long; sepals greenish; petals cream. FRUIT lenticular-orbicular, to 4 mm in diameter, dark red, glandular pubescent, viscid. —Rich soil in oak and ponderosa pine woodlands, often in canyons and riparian zones: all AZ cos. except La Paz, Santa Cruz, and Yuma; 1030-1820 m (3400-6000 ft); Jun-

Aug (fruits may persist overwinter); s Canada, WA, OR to New England, s to FL, TX, AZ, n Mex.

Rhus kearneyi Barkley (for T. H. Kearney). Kearney Sumac, Tinajas Altas Sumac. —Densely branched shrubs or small trees, to 3.5 m tall; old bark dark, scaly; branches tan to gray, densely puberulent to glabrate later. LEAVES simple, entire to serrulate, broadly elliptic, 2-6 cm long, 1.5-3.7 cm wide, leathery, olive-green, with glandular hairs beneath, glabrous to sparsely hirtellous above; tip rounded to acuminate; base rounded to cordate; petioles 3-10 mm long. INFLORESCENCES dense panicles, 2-4.5 cm long, puberulent; bracts lanceolate to ovate, glandular-puberulent, to 3 mm long. FLOWERS to 5 mm long; sepals pinkish, puberulent; petals cream, glabrous. FRUIT lenticular-orbicular, irregular in outline, 10 mm long, 8 mm wide, mottled brown and yellow, glandular-pubescent, viscid. [*Schmaltzia kearneyi* Barkl.]. —3 subsp.; sw AZ, Baja CA.

Subsp. **kearneyi** —Leaves entire, with short glandular hairs beneath (appearing as black spots in dried specimens), glabrous above; tip rounded. FLOWERS to 3 mm long. —North- and east- facing, steep, canyons, rocky slopes, and washes in Sonoran Desert mountain ranges: Yuma co.; 300-460 m (1000-1500 ft); Feb-Mar; sw AZ and one known record from Baja CA. A relict, possibly most closely related to *Rhus integrifolia* (Nutt.) Brewer & S. Wats. of coastal California (Moran 1969), known only from the Tinajas Altas, Gila, and Cabeza Prieta Mts. in AZ and the San Pedro Martir Mts. in Baja CA. The two other subsp., *R. kearneyi* subsp. *borjaensis* Moran and *R. kearneyi* subsp. *virginum* Moran, occur in Baja CA (Moran 1969).

Rhus lancea L. f. (lance-shaped, referring to the leaves). African sumac. —Trees or shrubs, to 10 m tall; old bark dark gray, fissured and orange beneath; twigs reddish. LEAVES evergreen, trifoliolate; petioles 25-30 mm long; leaflets subsessile, narrowly lanceolate, entire to slightly serrate, 4-10 cm long, 0.5-1.0 cm wide, entire, leathery, dark shiny green above, pale-green beneath, glabrous; apex acuminate; base narrowly cuneate. INFLORESCENCES open panicles, 2-9 cm long, terminal and axillary; bracts linear-subulate. FLOWERS to 3 mm long; sepals ovate, glabrous; petals oblong-ovate, greenish yellow, glabrous. FRUIT globose, to 5 mm in diameter, tan, resinous, wrinkled. [*Searsia lancea* (L. f.) Barkl.]. —Cultivated as an ornamental in the Sonoran Desert, escaping and naturalized (“its naturalization may be expected”, Lundell 1961) in canyons in the Rincon and Tucson Mts. in Pima County (Philip Jenkins pers. comm.), native to southwestern Africa (Lundell 1961). The southern African sumacs have been treated as the segregate genus *Searsia* Barkley (Barkley 1942). *Rhus lancea* is here treated within *Rhus sensu lato* as it is beyond the scope of this new Arizona Flora project to evaluate its generic placement.

Rhus microphylla Engelm. (little leaves). Little-leaf (desert) sumac. —Densely branched shrub, to 2 m tall; old bark dark gray, lenticular; branches gray, stiff and spinescent, puberulent to glabrate. LEAVES 12-20 mm long, deciduous, odd-pinnately compound, 5-9 foliolate, with a winged rachis; leaflets sessile, elliptic, 6-9 mm long, 2-5 mm wide, entire, hirsute. INFLORESCENCES small, dense spikes, terminal and axillary, 8-12 mm long; bracts ovate, pubescent, to 2 mm long;

flowers appearing early before or with the first leaves. FLOWERS to 3 mm long; sepals dark pink, glabrous; petals cream, glabrous. FRUIT ovoid, 5-7 mm in diameter, dark red to orange, glandular hairy, wrinkled in dried specimens. [*Schmaltzia microphylla* (Engelm.) Small]. —Gravelly mesas and rocky hillsides, often on limestone, in Chihuahuan Desert, semi-desert grassland, and oak (encinal) woodland, occasionally along dry washes and in mesquite bosques and riparian woodlands: Cochise, Graham, Greenlee, Pima, and Santa Cruz cos.; 1250-1715 m (3800-5200 ft); Mar-May; w TX and Mex to NM, AZ. In southeastern AZ, *Rhus microphylla* reaches the northwestern edge of its range.

Rhus ovata S. Wats. (egg-shaped, referring to the leaves). Sugar Sumac, Sugar Bush, Mountain-laurel. —Evergreen shrubs or small trees, to 5 m tall, densely leaved; old bark shaggy; twigs reddish, puberulent then glabrate. LEAVES simple, entire, repand, ovate (sometimes broadly so), 4-8.5 cm long, 3-5 cm wide, leathery, bright green, glabrous, conduplicate (tending to fold along the midrib, especially in dried specimens); tip acuminate; base rounded-truncate; petioles 10-20 mm long. INFLORESCENCES dense panicles, 2.5-3.5 cm long, glabrous; bracts ovate, sparsely pubescent, to 2 mm long. FLOWERS to 5 mm long; sepals magenta, ciliate; petals cream to pinkish, ciliate. FRUIT lenticular-orbicular, 5-7 mm in diameter, dark reddish, glandular-pubescent, viscid. [*Schmaltzia ovata* (S. Wats.) Barkl.]. —Open, rocky hillsides with interior chaparral and at upper edge of Sonoran Desert, sometimes along washes: Coconino, Gila, Graham, Maricopa, Mohave, Pinal, and Yavapai cos.; 550-1900 m (1800-6200 ft); Mar-May; s CA and Baja CA to AZ. The populations of *Rhus ovata* in AZ are disjunct from the Transverse and Peninsular Ranges of southern California. Its broad, shiny, evergreen leaves make *Rhus ovata* conspicuous on chaparral and desert hillsides.

Rhus virens Lindh. ex A. Gray (green, referring to the leaves). Evergreen Sumac, Tobacco Sumac. —Sparsely branched shrubs or small trees, to 3 m tall; bark gray, lenticular; twigs gray, puberulent to glabrate. LEAVES evergreen, petiolate, odd-pinnately compound, 5-9 foliolate; petiole to 2 cm long; leaflets petiolulate to subsessile, lanceolate or elliptic to ovate, 25-50 mm long, 10-25 mm wide, entire, leathery, dull green above, paler and puberulent to glabrate beneath; apices acute to acuminate; bases cuneate to rounded (sometimes obliquely). INFLORESCENCES open panicles, to 8 cm long and 15 cm wide, terminal and axillary, puberulent; bracts lanceolate, pubescent, to 2 mm long. FLOWERS to 5 mm long; sepals ovate, olive-green, glandular puberulent; petals cream, glabrous. FRUIT lenticular-orbicular, to 6 mm in diameter, orange, glandular pubescent, wrinkled in dried specimens. [*Rhus sempervirens* Scheele; *Schmaltzia virens* (Lindh.) Small; *Rhus choriophylla* Wooton & Standley; *Rhus virens* var. *choriophylla* (Wooton & Standley) L. D. Benson; *Rhus virens* subsp. *choriophylla* (Wooton & Standley) Young]. —Dry, often rocky hillsides, steep slopes, and canyons, upper edge of the Chihuahuan Desert to semi-desert grassland, chaparral, oak woodland, and as understory along washes and riparian zones: Cochise, Pima, and Santa Cruz cos.; 1100-1870 m (3600-6000 ft); Aug-Sept (fruits may persist overwinter); se AZ, s NM, w TX and n Mex. AZ material has been called *Rhus choriophylla* Wooton & Standley (Type: Guadalupe Canyon, on the Mexican boundary, near the southwest corner of New Mexico,

Mearns 699, US) based on fewer, larger, and glabrous leaflets and axillary as well as terminal inflorescences (Wootton and Standley 1913; Barkley 1937); but, it has been considered a weak variety (Vines 1960; Shreve and Wiggins 1964; Correll and Johnston 1970). These morphological characters are not consistently present in AZ specimens; therefore, AZ material is best treated as the far w portion of the range of *Rhus virens* Lindh. and not a separate taxon.

Toxicodendron Miller Poison-ivy

Dioecious shrubs with rhizomes to 1.5 m tall, or vines climbing with aerial roots to 30 m tall. LEAVES trifoliolate; leaflets ovate, entire to serrate, terminal leaflets with a petiolule, the lateral leaflets subsessile. INFLORESCENCES narrow panicles, pendant in fruit. FLOWERS small, regular, five-merous; sepals connate at base, glabrous; petals cream to yellowish with dark veins; style three-lobed. FRUIT cream-colored, striate and glabrous. —Ca. 15 spp; New World and e Asia. (Latin: poisonous tree). Gillis, W. T. 1971. *Rhodora* 72-237, 370-443. The ever present active poisonous compounds in the resin on the leaves, stems and fruits are catechols that cause dermatitis.

Toxicodendron radicans (L.) Kuntz (with aerial roots). Poison-ivy. —Vines climbing with aerial roots to 30 m or sparsely branched rhizomatous shrubs, to 1.5 m tall; branches puberulent to glabrous. LEAVES trifoliolate (rarely 5 foliolate); petioles puberulent to glabrous, 2-17 cm long; terminal leaflets with a petiolule to 3 cm long; lateral leaflets subsessile; leaflets narrowly to broadly ovate, 2-7 cm wide, 3-13 cm long entire or notched to crenate or serrate; bases rounded; apices acuminate. INFLORESCENCES a short, narrow panicle to 5 cm long, bracts lanceolate, deciduous. FLOWERS to 3 mm long; sepals deltoid, greenish, glabrate; petals oblanceolate, cream to yellowish with dark veins. FRUIT globose, to 5 mm in diameter, cream, striate, glabrous. [*Rhus radicans* L]. —10 vars., 2 in AZ their ranges meeting in se AZ where intermediates occur.

1. Plants vines with aerial roots or shrubs; petioles puberulent, shorter than the terminal leaflet; leaflets narrowly ovate, 2-3 times as long as wide; margin entire to notched var. *divaricatum*
- 1' Plants always subshrubs to shrubs, rhizomatous; petioles glabrous, usually much longer than the terminal leaflet; leaflets broadly ovate, 1-1.5 times as long as wide; margins crenate to serrate var. *rydbergii*

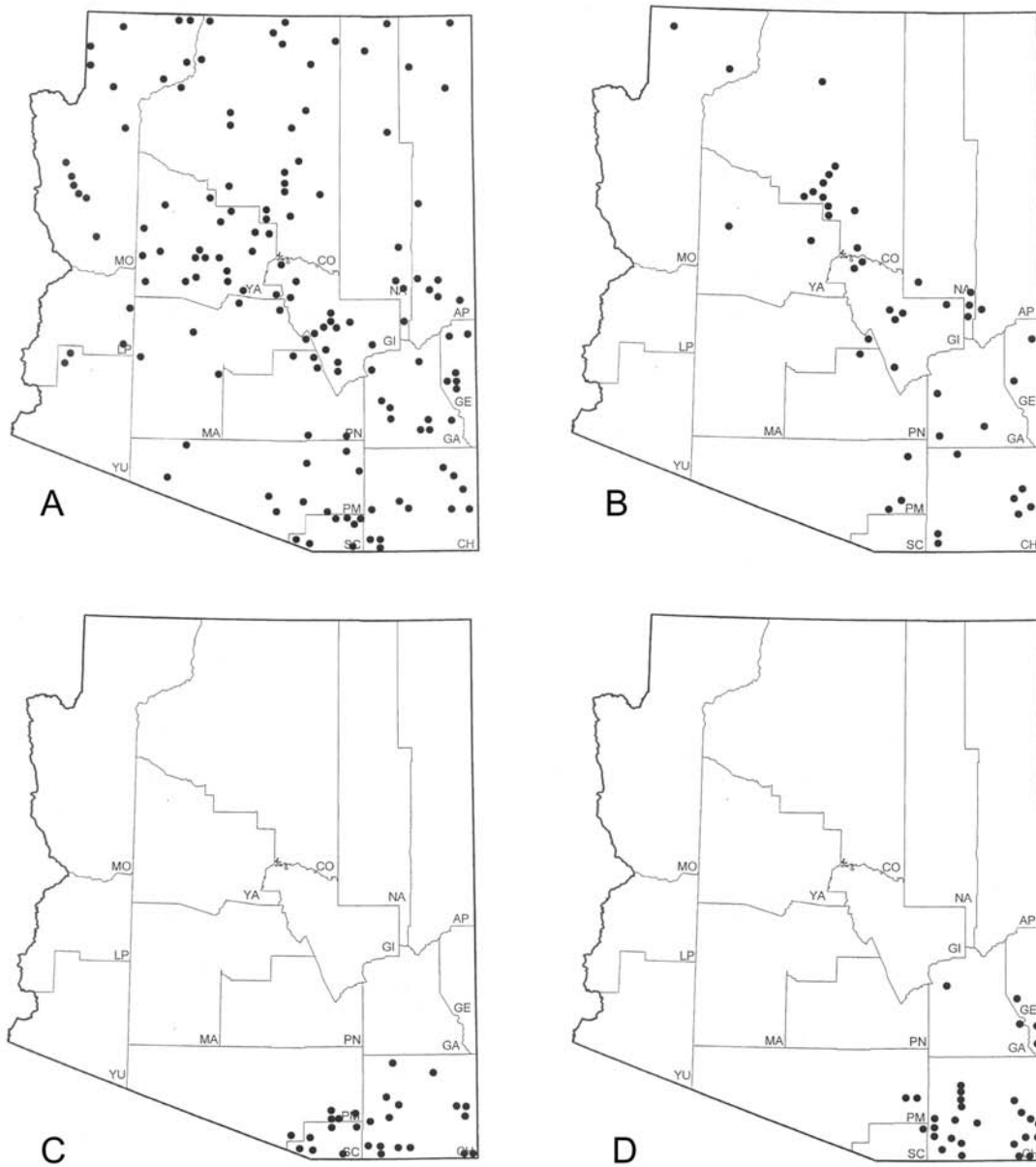
Var. **divaricatum** (E. Greene) Barkley (spreading at a wide angle). —Vines climbing with aerial roots or shrubs. LEAVES with puberulent petioles, shorter than the terminal leaflet; leaflets narrowly obovate, 2-3 times as long as wide; margins entire to notched. [*Toxicodendron divaricatum* E. Greene; *Rhus radicans* var. *divaricata* (Greene) Fernald]. —Canyon bottoms and adjacent slopes in riparian zones and Madrean woodlands; Cochise, Pima, and Santa Cruz cos.; 1390-1820 m (4600-6000 ft); May-Aug; se AZ and w Mex.

Var. **rydbergii** (Small ex Rydberg) D. S. Erskine (for P. A. Rydberg). —Subshrubs or shrubs spreading and rhizomatous, to 3 m tall. LEAVES with glabrous petioles much longer than terminal leaflet, to 17 cm long; leaflets broadly

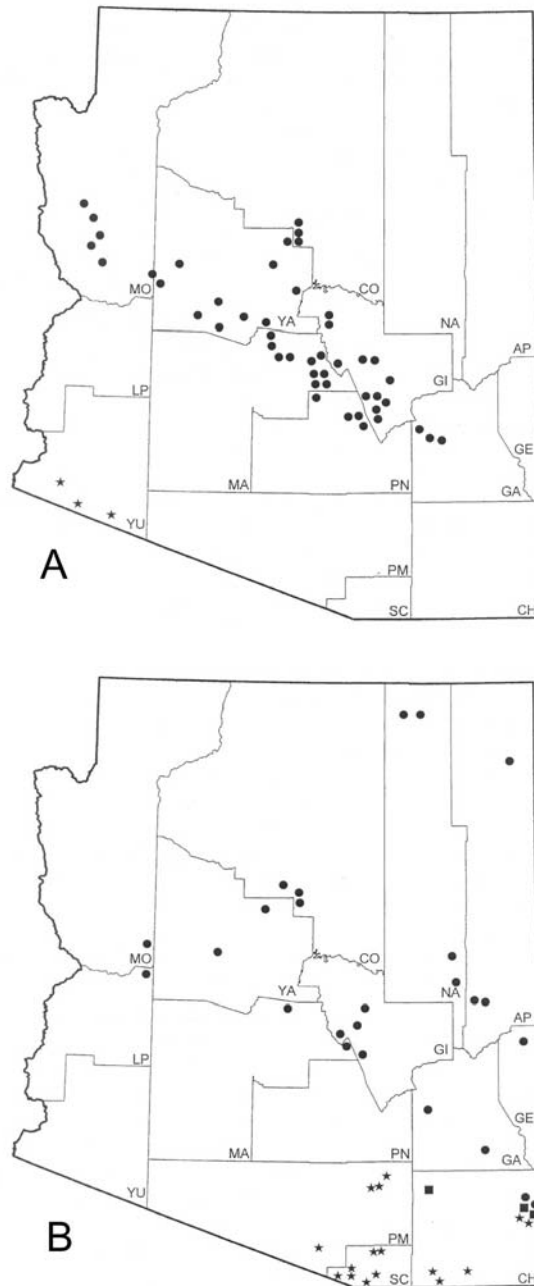
obovate, 1-1.5 times as long as broad; margins crenate to serrate, $2n = 30$. [*Toxicodendron rydbergii* (Small ex Rydberg) E. Greene; *Rhus rydbergii* Small ex Rydberg]. —Moist but often sunny sites along canyons and at seeps and springs, from the Sonoran Desert to mixed conifer forest; all AZ cos. except Pima, Pinal, Santa Cruz, and Yuma; 455-2575 m (1500-8500 ft); Apr-Jun; across s Canada and n US (e of the Cascades), s through Rocky Mountains and Great Plains to AZ, NM, and w TX.

ACKNOWLEDGMENTS

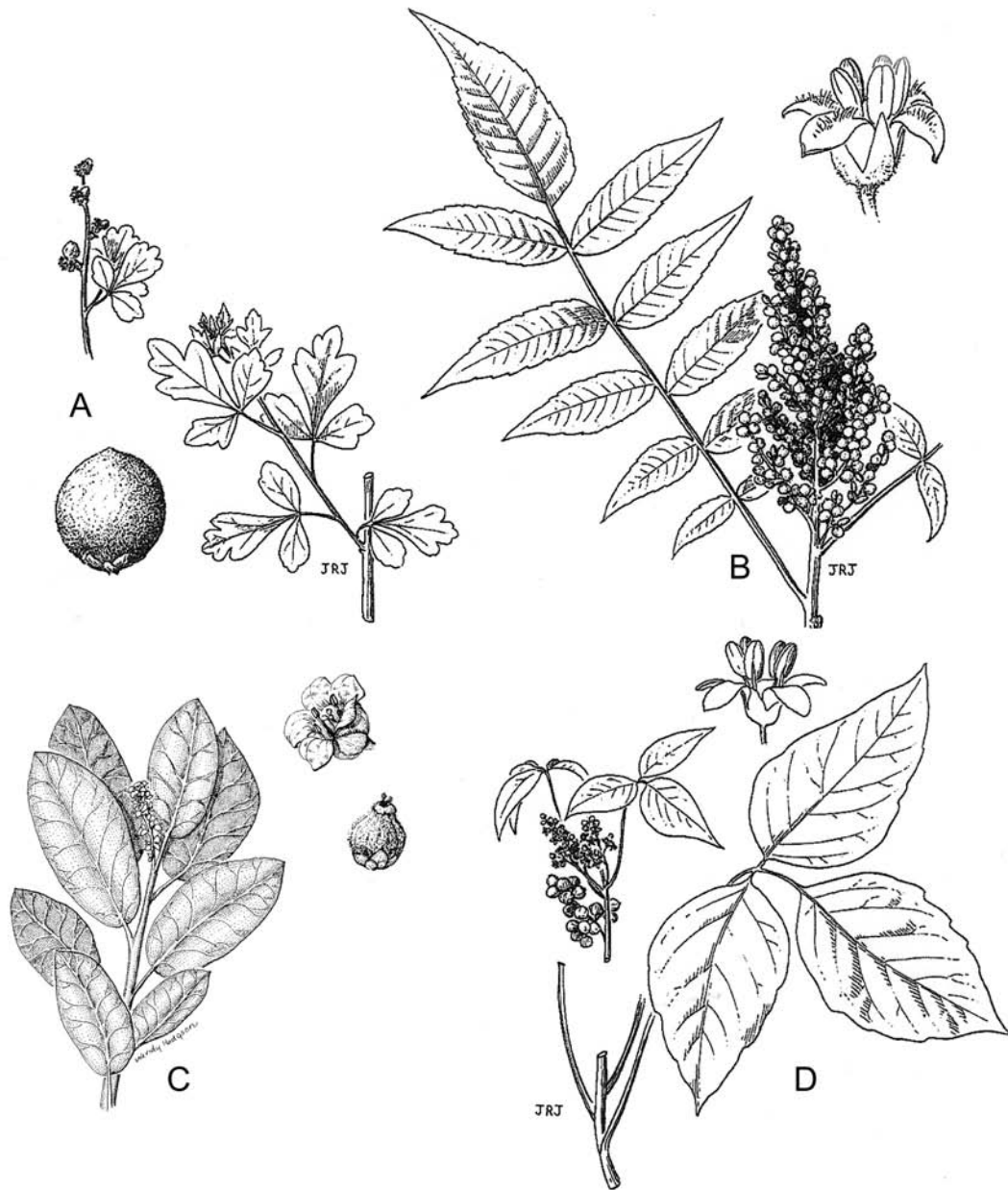
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Anacardiaceae Figure 1. Distributions of: (A) *Rhus aromatica* var. *trilobata*; (B) *Rhus glabra*; (C) *Rhus virens*; (D) *Rhus microphylla*.



Anacardiaceae Figure 2. Distributions of: (A) *Rhus ovata* (circles), *Rhus kearneyi* subsp. *kearneyi* (stars); (B) *Toxicodendron radicans* var. *rydbergii* (circles), *Toxicodendron radicans* var. *divaricatum* (stars), *Toxicodendron radicans* var. *divaricatum* X *rydbergii* (squares).



Anacardiaceae Figure 3. (A) *Rhus aromatica* var. *trilobata*, habit 1/2x, fruit 8x; (B) *Rhus glabra*, habit 1/2x, flower 8x; (C) *Rhus kearneyi* subsp. *kearneyi*, habit 0.8x, fruit 1.2x, flower 3x; (D) *Toxicodendron radicans* var. *rydbergii*, stem with fruits 1/2x, flower 5x. (A, B & D, reproduced with permission from *Flora of the Pacific Northwest*, 1973, University of Washington Press, drawn by Jeanne Janish; C, reproduced with permission from *Arizona Rare Plant Field Guide*, 2001, drawn by Wendy Hodgson).

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